DEC STD 043-0 Packaging Requirements for Digital Products, Parts, Assemblies, and Materials

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ABSTRACT: This standard describes Digital's packaging requirements for shipments between Digital facilities, from vendors to Digital, and from Digital to customers. It defines requirements for pallet and carton size, weight and environmental protection. It defines packaging requirements for sheets, blanks, or coils of steel or aluminum. (Refer to DEC STD 043-1.) Complementing this standard is DEC STD 045-0 Packaging Products for International Shipment -Introduction and EL-MF425-00 Procedures for Consolidating Packaged Products for Domestic and/or International Shipment.

APPLICABILITY: These procedures are mandatory for all Digital facilities and departments involved with packaging, distributing, receiving, or transporting goods and products.

STATUS: APPROVED 31-May-1991; use VTX SMC for current status.

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Use VTX SMC to order copies of this document from Standards and Methods Control. Send distribution questions to JOKUR::SMC or call DTN: 234-4423.

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1 GENERAL DESCRIPTION

1.1 PURPOSE

This document describes the requirements that ensure the products, assemblies, parts, and materials (hereafter referred to as *product*) supplied to and shipped by Digital Equipment Corporation are properly protected and packaged for safe and effective handling, storage, and shipping.

1.2 SCOPE

This document defines requirements for the packaging of products where purchase orders do not specify packaging requirements or when purchasing specifications are not available; these requirements apply to the following shipping situations.

a. Supplier to Digital

b. Digital to Digital

c. Digital to Customer

Packaging requirements for Customer Service spares are defined under heading 5.

This document and the regulations referred to herein represent minimum requirements worldwide. In countries other than the U.S., requirements that exceed the minimum requirements of this document shall take precedence.

Information on how to obtain the documents referenced herein is contained at the back of this standard.

1.3 RESPONSIBILITIES

1.3.1 Site Packaging Engineer or Focus and/or Manufacturing Distribution Operations Groups

It is the responsibility of Digital's Engineering, Manufacturing, and Distribution Operations groups to ensure that the provisions of this standard are met. It is also the responsibility of the above groups to implement corrective action as required.

1.3.2 Quality Personnel

Digital's Quality personnel are responsible to monitor compliance with this document and to report nonconformance to the responsible group(s).

1.3.3 Packaging Graphics Design

Packaging for products intended for sale to finished goods customers must have approved graphics. Only the latest revision to the graphic design printing format shall be used for preprinted packages shipped to Digital customers. For specific requirements and/or approvals, refer to *DEC STD 178-4 Shipping Container Marking Requirements for Finished Goods* or contact:

Technical Design Support
MLO8-2/L13, DTN: 223-5717
Maynard, MA 01754-2571

1.3.4 Supplier

Digital recognizes the supplier's obligation to supply material that is fit for its intended use, properly packaged and protected from shipping and handling hazards, and in compliance with applicable laws, regulations, and requirements.

This document is intended to assist the supplier in meeting the above requirements; it does not relieve the supplier of obligations. If the supplier has utilized all resources and still requires assistance, Digital's Packaging Engineers shall be available for consultation by contacting:

Industrial Package Engineering
MLO8-3/D17, DTN: 223-9179
Maynard, MA 01754-2571

1.3.4.1 Compliance

Supplier compliance forms, certification papers, and other pertinent information shall be included with the delivery of the product or materials. Refer to *DEC STD 178-8 General Shipping Documentation and Container Labeling Requirements for Finished Goods Intended to be Shipped to Customers*.

1.3.4.2 Replacement Packaging Materials (For Buy-Out Suppliers)

For products purchased by Digital for resale, replacement packaging may be required within the early time frame of introducing a new product. Suppliers, therefore, may be requested to supply replacement packaging parts to meet demand.

The supplier may also be requested to supply additional replacement packaging materials for Digital throughout the life of the product. Such requests shall be a provision of the product purchase order.

1.3.4.3 Packaging Specifications

When requested by Digital, the supplier shall supply specifications and drawings of the package parts and their assembly showing the relation of the package parts to the product.

The documents shall be in English and in the language of the requesting country.

2 GENERAL REQUIREMENTS

2.1 CONFLICTING REQUIREMENTS

In the event of a conflict between this standard and the requirements of other documents, the following precedence shall apply.

a. Purchase order (as defined by the receiving facility)

b. Purchase specification (99- and/or 37-class)

c. This document

2.2 SHIPPING CONTAINERS

A shipping container must provide adequate strength and protection for multiple handling, storage, and shipping throughout the distribution system. Refer to subhead 4.4 for specific test requirements for packages designed for shipment to finished goods customers.

2.2.1 Safety

The design of containers and packaging components shall be of sufficient quality and reliability to not constitute a product safety hazard or product liability under normal use or foreseeable misuse. All efforts should be made to assure that packages are not attractive to children or others for hazardous misuse at any time.

The design should also consider, when applicable, requirements for customer installability, human factors, unpacking, and repacking. Instructions for such operations may be necessary.

2.2.1.1 Selection of Packaging Materials

The use of highly flammable cushioning materials should be kept to a minimum (less than 25% expanded plastic by volume, if possible) and be consistent with the fire protection available in Digital warehouses. Digital encourages the use of fire resistant materials that meet Class IV requirements as defined in *Factory Mutual System, Loss Prevention Data Sheet 8.0C, Definition of Class IV Commodity and Classification of Plastics by Trade Name (U.S.)*, whenever these materials provide an acceptable cost/performance alternative.

2.2.2 Construction

The shipping container shall be constructed of material with adequate strength to satisfy the requirements of all local and international regulations. The minimum requirement is to fulfill *Uniform Freight Classification, Rule 41 (U.S.)*.

Manufacturers' joints for corrugated fiberboard containers and corner joints on caps and trays shall be glued with moisture resistant glue or stitched. Taped manufacturers' joints may be used only when they meet the above criteria and when authorized by the responsible plant packaging focus. Locked corner joints are acceptable for caps and/or trays when die cut for that purpose.

Shipping containers must be free of all handling hazards, such as protruding nails, staples, insecure strapping, and/or broken pallet boards.

2.2.3 Printing

Shipping containers transported within the USA must bear a legible Box Maker's Certificate guaranteeing that the box conforms to *Uniform Freight Classification (U.S.), Rule 41, Section 4*. The certificate must be of a size and type shown in the Classification.

Fiber boxes made in foreign countries and used for freight shipped into the United States and conforming to all provisions of Rule 41 (U.S.) need not have Certificate of Box Maker printed thereon, or the Box Maker's Certificate may be printed in the language of the country in which it was made, provided the shipper certifies on Bills of Lading that the boxes do so conform.

Reference subhead 1.3.3 for required printing on packages for products intended for sale to finished goods customers.

2.2.4 Package Size/Weight (Gross)

The package weight for one Digital employee to handle without the assistance of mechanical handling devices (pallet jacks, lift trucks) shall not exceed 18 kg (40 lb) gross weight. The Digital ordering facility may accept shipments exceeding the limit (without provisions for mechanical handling) only if notified in advance of the shipment.

Shipping weight shall be within the following limits.

a. Common Carrier

When more than one product is consolidated into a shipping configuration with a gross weight exceeding 18 kg (40 lb), the shipment must be unitized (unless otherwise approved by Digital).

b. Small Package Carrier

When the product weight and size are within small parcel shipping parameters, the vendor shall make a concerted effort to provide a shipping container that meets these requirements.

1. United Parcel Service's (UPS) weight and size parameters are as follows:
   a. Maximum shipping weight: 32 kg (70 lb).
   b. Maximum size: 3302 mm (130 in), combined length and girth with a maximum length of 2743 mm (108 in) per package. Maximum size shall be determined by the following formula.

$$\text{Combined length and girth} = (L + G)$$

where: L = Length (the longest outside dimension of the container).

G = Girth (the widest outside perimeter measurement perpendicular to the length).

2. United States Postal Service weight and size parameters for 2nd, 3rd or 4th Class Post Offices are as follows:
   a. Maximum shipping weight: 32 kg (70 lb).
   b. Maximum size: 2743 mm (108 in) combined length and girth. Use UPS formula.
3. Federal Express (Fed Ex) weight and size parameters for overnight service are as follows:
   a. Maximum shipping weight is 68 kg (150 lb).

b. Maximum size is up to 2743 mm (108 in) in any single dimension or up to 3302 mm (130 in) combined length and girth (using UPS formula).

c. If the shipping container exceeds either weight or size limits, it will default to **second day** delivery service.

4. Roadway Package Systems (RPS) weight and size parameters are as follows:

a. Maximum shipping weight is 45 kg (100 lb).

b. Maximum size is the combined length and girth (using UPS formula).

- U.S.A. : 3302 mm (130 in)
- Canada : 2997 mm (118 in)

NOTE

If a package weighs less than 11 kg (25 lb) and measures greater than 2133 mm (84 in) in combined length and girth, it is designated as *oversize* and must cost at the 11 kg (25 lb) rate.

c. Consolidation of Small Packages for Small Package Carriers

When small packages are consolidated into shipping configurations to reach the maximum shipping weight as specified by the small package carriers, the consolidation method used must allow for convenient breakdown at the Digital receiving dock to weights of 18 kg (40 lb) or less, whenever possible.

2.2.5 Carton Closures

Closures shall be taped, glued, or strapped (plastic) conforming to *Uniform Freight Classification, Rule 41, Section 7 (U.S.).* Stapled closures are unacceptable.

Cartons weighing up to 23 kg (51 lb) gross weight, but not exceeding 600 mm (24 in) in length, may be sealed using tape conforming to Digital specification *A-PS-9906837-0-0, Tape - Polypropylene.*

When taping may interfere with carton graphics or weight exceeds 23 kg (51 lb), flaps shall be secured by gluing or taping with transparent tape conforming to Digital specification *A-PS-9906487-0-0, Tape - Polyester.*

Do not cover bar code labels with closure tape (clear or opaque) or glue; this can render the label unreadable by electronic scanning equipment.

3 CONTAINER DEFINITIONS

3.1 SINGLE UNIT CONTAINER

3.1.1 Definition

A package containing a single product. This may include a shipping container that holds one or more pieces combined as one Digital part number.

3.1.2 Usage

All products intended for sale to finished goods customers shall be packaged in single-unit shipping containers unless otherwise authorized by the Digital ordering facility prior to shipment.

3.2 MASTER PACK

3.2.1 Definition

A shippable or nonshippable box used to overpack a multiple of like individual boxes, bags, or other containers, to protect shelf packages, or to facilitate handling.

3.2.2 Usage

When a supplier is equipped to master pack in standard quantities for other users, the Digital procurement facility shall make every attempt to order in those quantities.

All like products/parts in a master pack shall have the same part number. All master packs shall contain the same quantity of like products/parts.

If any master pack is less than full, and the product is serialized, the quantity shall be clearly marked on the content listing label as defined in DEC STD 178-8. If the product is not serialized, refer to *DEC STD 047-1 Bar Code: Product and Shipping Carton/Container Labelling*. Less than full master packs shall be positioned on the top of the load when palletized.

NOTE

In the event that interplant shipments combine items purchased under different order numbers, the consolidation pallet or container must bear an interplant bill of lading listing all order numbers.

3.3 BULK CONTAINER

3.3.1 Definition

A package containing two or more like products where each product may or may not be separated, but is not contained within another package.

3.3.2 Usage

Since many stock products are packed in bulk, it is recommended that Digital Buyers order these products in their standard pack and number of pieces per shipping container. (See subhead 3.2.2.)

3.4 CONSOLIDATION CONTAINER

3.4.1 Definition

A shipping container that consolidates two or more dissimilar packages.

3.4.2 Usage

Suppliers are encouraged to use master packs or consolidation containers when shipping several small packages to the same Digital facility; this usually results in lower handling and transportation costs.

3.5 UNITIZED LOADS

3.5.1 Definition

A pallet containing one or more items packaged as single unit containers or shippable master packs.

3.5.2 Usage

All items shipped to Digital shall be unitized when the shipping volume for the item(s) exceed one m^3 (3.28 ft^3) or the shipping weight exceeds 18 kg (40 lb) gross.

3.6 SIZE/WEIGHT LIMITS FOR PALLETIZED LOADS

3.6.1 Pallets

The standard pallet size for Digital distribution handling is 1200 mm × 1000 mm (48 in × 40 in) and should be used whenever possible. The minimum clearance for pallet-jack entry between the top and bottom decks is 89 mm (3.5 in). Refer to Digital specification *A-PS-9900057-GS Pallets*. When it is necessary to use a pallet that is less than 1200 mm × 1000 mm (48 in × 40 in), the openings between pallet stringers shall be wide enough to provide clearance for pallet-jack entry, a minimum of 705 mm (27.75 in) when possible.

Pallet styles may be 9 block 4-way entry (full perimeter base for ISO pallets), or partial 4-way entry (4-way for fork trucks and 2-way for pallet jacks). Pallets should be constructed according to National Wood Pallet Association specifications (U.S.) or British Standards Institute (BSI) *BS 2629 Pallets for Materials Handling for Through Transit (Part 1 Dimensions, Construction and Marking)*.

3.6.2 Load Height

Load height (including pallet) shall be 1118 mm (44 in) maximum.

The following load heights are also acceptable if agreed to by the Digital ordering facility.

a. Load height (including pallet) equal to either the full clear height, or

b. One-half of the clear height of trailers or ocean containers over 2286 mm (90 in) usable height.

3.6.3 Load Overhang

3.6.3.1 Unitized Loads

The load shall not overhang the wood pallet.

If the size of the load is greater than a1200 mm × 1000 mm (48 in × 40 in) pallet, use a pallet equal to or greater than the size of the load (maximum 50 mm, [2.0 in] oversize).

3.6.3.2 Consolidation Containers

The bottom tray (when applicable) is allowed to overhang the wood pallet by the thickness of the corrugated tray material on all sides (maximum of 1.9 mm [0.7 in]). This will provide for incoming consolidation container components to be nested within the base tray, thereby reducing storage cube. When assembled, the outer sleeve and base tray will be a smooth tight fit. This should not affect the performance of consolidation containers, since the outer sleeve and load will still be within the pallet perimeter.

3.6.4 Load Underhang

The underhang of a load shall be minimized (25 mm [1.0 in] maximum on each side) in order to achieve maximum cube utilization and load stability during shipping, handling, and storage.

If the size of an item/load underhangs the 1200 mm × 1000 mm (48 in × 40 in) pallet by more than 25 mm (1.0 in) on any side, adjust the pallet size and/or load. However, every effort should be made to fit the load to the standard pallet size, 1200 mm × 1000 mm (48 in × 40 in); the goal is to maximize the use of this pallet.

In cases where the pallet load configuration is less than 1200 mm × 1000 mm (48 in × 40 in) the load or pallet size should be adjusted to make possible a fork lift access opening of at least 705 mm (27.75 in) when practical to do so.

3.6.5 Load Weight

Unitized load weight shall not exceed 907 kg (2000 lb).

NOTE

For more information on unitizing and consolidation methods, such as selection of containers, securing loads, use of edge protectors, and the like, refer to *EL-MF425-00 Procedures for Consolidating Packaged Products for Domestic and/or International Shipment*.

4 PRODUCT PROTECTION/PACKAGE PERFORMANCE

The primary purpose of the package is to ensure customer satisfaction on delivery of the product. The customer is defined as the end user of the component, assembly, subassembly, or finished product. The determination of quality received rests with the customer.

4.1 Effects of Protective Materials

Product finish (plating, paint, polished surfaces) must be protected by separating surfaces from potentially abrasive packaging materials or other products within the same package. Protective coverings (plastic films, bags) must be compatible with the product finish and electronic sensitivity.

4.2 Dunnage

Packages should be sized to minimize the use of dunnage materials. Where dunnage is necessary, the materials shall be clean, with minimal dusting. The use of free flow plastic forms (peanuts and the like) as dunnage is unacceptable unless suppliers have written approval from the Digital receiving facility.

4.3 INTEGRATED CIRCUITS

Integrated Circuits (ICs) shall be packaged in accordance with *A-PS-1900000-GS-0, General Specification for Dimensional and Packaging Requirements for Multipackage Dual-in-Line Packages.*

4.4 SPECIAL HANDLING REQUIREMENTS

The following responsibilities apply to Digital when it functions as the shipper, supplier, or receiver.

4.4.1 HAZARDOUS MATERIALS (HM)

It shall be the supplier's and shipper's responsibility to ensure that the packaging, external labeling, and manifesting of products that are considered hazardous comply with local and national/international hazardous materials regulations. As a minimum, the shipper has the responsibility to ensure that packaged HMs have passed the required performance tests as described in ASTM DESIGNATION: *D4919-89 Standard Specifications for Testing HM Packaging*.

They must also comply with the requirements defined in Digital's hazardous materials document, *EL-CP534-00 Hazardous Materials/Dangerous Goods Policies and Procedures Manual.*

4.4.2 Chemicals

For special precautions for handling, storing or shipping chemicals, see DEC STD 136-3 *The Introduction and Review Process for Digital Chemical Products*.

4.5 TESTING PACKAGED PRODUCTS

The following subheads provide sources for detailed test and reporting procedures and additional testing requirements.

4.5.1 Finished Goods

Refer to *DEC STD 102-0 Environmental Standard for Computers and Peripherals - General Test Requirements* for containers/packaging test procedures.

4.5.2 Incoming Materials

Product packages shipped to Digital shall meet or exceed the requirements of *National Safe Transit Association (NSTA), Pre-shipment Test Procedures*.

4.5.3 Additional Test Requirements

Compression — The shipping container shall support a minimum static load determined by the following formula.

$$L = W\,[(H - h)/h] \times F$$

Where:

L = The static load (kg/lb) the packaged product shall withstand.

W = Shipping weight (kg/lb) of the packaged product.

H = For metric measurements 6096 mm, for U.S. conventional measurements 240 in.

h = Height of packaged product measured in millimeters or inches

F = 4 (Design safety factor)

4.5.4 Test Reports

The supplier shall provide copies of test reports to Digital upon request. If the supplier has documented proof showing a history of successful shipments of a product and is willing to share that information with Digital, the requirements for laboratory testing may be minimized.

The Digital packaging and/or product engineer shall coordinate the need for additional testing. When additional testing or evaluation is required, the supplier shall provide sample(s) of the packaged product upon request.

4.6 ELECTROSTATIC DISCHARGE (ESD)

Products that are static-sensitive shall be protected from electrostatic discharge. Refer to *DEC STD 067-2 Packaging of Electrostatic Discharge Sensitive-Devices: Procedures and Protective Materials* for detailed requirements.

4.6.1 Modules

All modules or printed wiring boards (PWBs) are considered by Digital to be ESD sensitive. Packaging materials in direct contact with PWBs shall be noncorrosive and have sufficient conductivity on all surfaces to provide a controlled bleed-off of static charges to ground without producing a spark. Other interior packaging, such as protective cushioning materials, shall also be antistatic and noncorrosive. Refer to DEC STD 067-0, subhead 2.8, for packaging requirements.

Assembled PWBs shall be individually packaged in an approved Digital shipping container unless other packaging is agreed upon by the Digital ordering facility.

Most Digital manufacturing plants maintain static-free work areas. For this reason suppliers shipping components into DEC plants should consider the use of antistatic packaging materials wherever they provide an acceptable cost/performance alternative (to static-generating materials), and they must be used when specified by the procuring facility.

4.7 CORROSION/MOISTURE PROTECTION

Digital products are often exposed to fluctuating temperatures and humidity in transit and storage which can cause condensation to form on sensitive surfaces. Packaged products must meet the requirements of *DEC STD 102-1 Environmental Standard for Computers and Peripherals - Temperature, Humidity, and Altitude Test Requirements*. Water-vapor-proof protection within the packaging container is required when shipping to certain international areas. Refer to *DEC STD 045-0 Packaging Products for International Shipment - Introduction* for a list of countries that require this additional protection and

a detailed description of protection methods. When watervapor-proof packaging is used, label part number 36-22283-01 must be applied to the shipping container.

4.8 SHIPPING INFORMATION

4.8.1 Shipping Labels

For label content and requirements, refer to DEC STD 178-8.

4.8.2 Bar Coding

Bar code labels shall be applied to the shipping container, positioned according to printed container location marks. Refer to *DEC STD 178-4 Shipping Container Marking Requirements for Finished Goods* for specific locations.

For bar code labeling information refer to DEC STD 047-1.

4.8.3 Marking

Supplier logos shall not be preprinted, stenciled, stamped, or marked in any other manner on the exterior surface of a container that is to be transshipped to a Digital customer (refer to subhead 5.3.2 for vendor equipment services (VES) exceptions).

For additional container marking information refer to DEC STD 178-4, or contact the Technical Design Support at MLO8-2/L13, DTN: 223-5717, Maynard, MA 01754-2571 for specific requirements.

For information on the marking of individual parts, refer to *DEC STD 178-1, Digital Marking Requirements for Piece Parts*.

4.9 BLOCKING AND BRACING CARRIER VEHICLES

Cargo must be properly stowed and secured within the transport vehicle for maximum protection.

Items that do not completely fill the shipping vehicle shall be blocked, braced, anchored, or otherwise immobilized, except where such mounting is part of the package cushioning or is designed to protect against shock and vibration during shipment.

The materials selected for blocking and bracing, and the design and application of the blocking and bracing, shall be compatible with the load to be supported and with the size, shape, and strength of the items' bearing areas. For more information refer to *EL-MF425-00*.

5 CUSTOMER SERVICE (SPARES) PACKAGING REQUIREMENTS

When the following requirements differ from previously stated requirements, the requirements defined herein shall take precedence. All other requirements still apply.

5.1 GENERAL REQUIREMENTS

This subhead defines the single unit packaging, consolidation, and material handling requirements for internally and externally purchased Digital Customer Service spares/field replaceable units (FRUs). The intent of these requirements is to ensure that single unit packaged and consolidated FRUs are protected against damage from the shipping environment, transit handling, and electrostatic discharge. For more information, refer to DEC STD 106-0 *Quality Requirements for Customer Service Spares*.

Protection shall be provided for all Customer Service products that are shipped:

- from a Digital or external supplier to a Customer Service distribution center, and then transshipped to an end-user, and/or
- directly from a Digital or external supplier to an end-user(at any location worldwide).

All shipments must be compatible with the material handling and ordering systems used by Digital Customer Service. These requirements apply to all material supplied to Digital Equipment Corporation Customer Service regardless of order mode (P-1, E-1 routine) or quantity ordered. Packaging for refurbished or repaired items shall perform the same or equivalent to packaging designed for the original product.

It shall be the responsibility of Digital's Customer Services Logstics Product Protection Services to determine whether packaging meets the customer service product requirements of this standard.

Questions regarding packaging for Customer Service products should be directed to the Customer Services Logistics Product Protection Services (CSLPPS) group, DAS1-1/E27, Andover, MA 001810-5897.

5.2 SPECIFIC REQUIREMENTS

5.2.1 Single Unit/Individual Packaging

All products, including spare parts, repaired parts, and/or options internally or externally purchased for Digital Customer Service shall be individually packaged in a shipping container to ensure protection throughout normal distribution, handling, and storage. This includes future transshipment of individual packages from ordering facilities to Digital Customer Service Repair Centers and/or Digital stockrooms worldwide.

5.2.2 Product Bulk Packaging

5.2.2.1 Bulk Container

A standard-order bulk pack is the assembly of standard quantities of items into one large container for shipment. Because many stock products are packed in bulk, Digital expects to receive these products in their standard pack with their associated number of pieces per shipping container.

Bulk-packaged items may be placed in plastic bags and master packed in corrugated cartons. Parts having protrusions or are otherwise susceptible to damage during storage or handling shall be boxed with adequate interior cushioning/bracing.

Bulk-packing is the exception to the rule in Customer Service and shall be used only when authorized by the Digital ordering facility prior to shipment.

5.2.3 Master Packs

Multiples of like products in unit containers or shelf packages shall be packed in master packs for shipping protection and to facilitate handling and storage.

5.2.4 Marking/Labeling

a. **Non-shippable** — Each container (bag, box, or other that would normally be packed in a shipping container) must be labeled/marked with the following information:

1. Digital part number, variation, and revision level
2. Supplier's part number (external supplier only)
3. Supplier's lot number
4. Quantity per container. For example:

Single unit container	—	Quantity 1
Bulk container (100 loose pieces)	—	Quantity 100
Master pack of bulk containers (10 bulk packs of 100 each)	—	Quantity 1000

The individual package shall not display the external supplier's name or logo except as noted in subhead 5.3.2.

b. **Shippable** — Shipping containers from external suppliers to Digital, including unitized loads, shall be labeled with the following information:

1. Destination, name and address
2. Digital purchase order number
3. Digital part number, variation, revision level
4. Supplier's part number (external supplier only)
5. Supplier's lot number (when applicable)
6. Quantity
7. Number of containers on the pallet (when applicable)
8. Carton no. _____ of _____ (when applicable)
9. Supplier's name and address
10. Made in _____ (country of origin)

NOTE

Label size not to exceed 121 mm × 70 mm (4.76 in × 2.76 in)

c. **Shippable** —- From Digital to Customer Service or finished goods customers.

For detailed marking and labeling requirements, refer to *DEC STD 178-4 Shipping Container Marking Requirements for Finished Goods* and *DEC STD 178-8 General Shipping Documentation and Container Labeling Requirements for Finished Goods Intended to be Shipped to Customers*.

5.3 VENDOR EQUIPMENT SERVICES (VES)

The purpose of this section is to provide Digital Customer Service with the means to purchase spare parts for the repair of products not manufactured by Digital.

5.3.1 Scope

Field Replaceable Units (FRUs) may be shipped by all modes of transportation to destinations throughout the world. Therefore, it is critical that all VES spares are properly packaged/protected within a suitable shipping container to withstand normal shipping and handling between the supplier and the end user.

5.3.2 Exceptions

All previous Customer Service requirements pertain to VES with the following exceptions:

a. Vendor's name and logo — Individual packaging may display the vendor's name and/or logo (exception to subhead 5.2.4).

b. Testing for packaged products — *NSTA Preshipment Testing or ASTM D4169* may be substituted in place of DEC STD 102-0 Environmental Standards for Computers and Peripherals (exception to subhead 4.5).

c. Electrostatic discharge — *Electronic Industry Association Interim Standard EIA IS-5, Packaging Materials Standards for ESD Sensitive Items*, may be substituted for DEC STD 067-0 (exception to subhead 4.6).

Questions pertaining to packaging for VES products should be directed to the Customer Services Logistics Product Protection Services group, DAS1-1/E27, Andover, MA 01810-5897. Also refer to Digital specification A-PG-FSGUIDE-GS-DA00 *Customer Service Logistics Packaging and Labeling for FIT-FOR-USE Classification*..

NOTE

It shall be the responsibility of the Customer Service Product Protection Group to ensure compliance with DEC STD 178-8 prior to reshipment of containers to customers.

6 ENVIRONMENTAL PROTECTION REQUIREMENTS - PACKAGING MATERIALS AND PROCESSES

6.1 CHLOROFLUOROCARBONS (CFCs)

Chlorofluorocarbons (CFCs) shall not be used in the manufacturing process for any packaging materials shipped from or received into Digital facilities. This includes all CFCs covered by the Montreal Protocol and all other substances having an ozone depletion (ODP) level greater than 0.1.

6.2 PACKAGING WASTE MINIMIZATION

Packaging waste for all Digital materials shall be minimized by using the following principles of waste minimization.

a. **Source reduction** — Reduce the amount of packaging material required to ship the item. This is the preferred approach since it eliminates the need to dispose of additional packaging materials that are not used as a result of applying this principle. There are several approaches to achieving source reduction.

1. *No packaging* — If an item can be shipped/transported without packaging, this should be considered as one of the first alternatives. The use of padded van carriers or reusable containers are suggested methods to attain this goal.
2. *Design for minimum packaging material* — When designing packaging systems, the selection of materials and configuration should minimize the total amount of packaging material, consistent with cost and protective requirements outlined under head 4. Particular attention should be given to source reduction when dunnage materials are used and when single unit packages are specified so that they may be shipped without requiring further overpacking to be fit for shipment. See subhead 3.1.2.

   Bulk containers should be specified whenever possible to reduce the amount of packaging materials used per unit. See subhead 3.3. When several package designs are being considered, preference must be given to the alternative that minimizes packaging waste, yet satisfies other package requirements.
3. *Reuse* — All packaging applications must be considered as having potential for reusable packaging. Generally, items which can be shown to yield significant cost and/or waste reduction over expendable packaging, when all cost elements are considered, will be good applications.

   A critical requirement for such applications will be a clearly defined and supported return process that includes handling and accounting within facilities, transportation, any required cleaning/refurbishing activity, and any other associated activities. It is preferred that reusable packaging be introduced in conjunction with a just-in-time pull process that will greatly facilitate the control of empty containers and reduce the quantity required for an application.

   Before such applications are pursued, sufficient cost analysis needs to be done to confirm that expected savings will be realized.

   Cost analyses should include, as required, material, tansportation, disposal, labor associated with all aspects of the process, and any other costs that may be involved.

   A detailed cost analysis model is available through the Reusable Packaging Program Office at DTN: 223-3758 or outside line: (508) 493-3758.

   Reusable packaging can consist of traditional packaging materials such as corrugated fiberboard, foams, and like materials that are used repeatedly. Frequently, reusable packaging will be of more permanent type materials such as rigid solid plastics or metals. The devices, themselves, can be a variety of forms from standard tote boxes, to highly customized cases, to rolling racks and larger reusable enclosures.

   All applications must consider existing standard reusable packaging before new and unique designs are pursued. For further information on what is available, contact the Reusable Packaging Program Office at DTN: 223-3758 or outside line: (508) 493-3758.

b. **Recyclability** — All packaging materials used to ship Digital goods should be capable of being recycled into the same, or other materials. All combinations of materials should be able to be separated to the greatest extent possible, without leaving residues of dissimilar materials that will conflict with recycling processes.

   All packaging materials used to ship Digital goods should contain the highest amount of recycled content possible, without compromising necessary quality requirements.

6.3 DISPOSABILITY

Although our goal is to minimize packaging waste by aggressively applying principles stated previously, we must recognize that there will probably always be a need to dispose of some waste packaging materials. So that these materials can be disposed of in a way that is not harmful to the environment, the following requirements will apply also to all packaging materials.

a. **Clean burning** — Material must be capable of being burned without causing any unacceptable air pollution as defined by national or local regulations.

b. **Safe landfill** — Materials must not cause any adverse effect on surrounding area or groundwater when properly disposed of in landfills.

6.4 TOXIC PACKAGING MATERIALS

Toxics contained in packaging materials must be at the lowest attainable level. The non-incidentally introduced accumulated total for lead, mercury, hexavalent chromium and cadmium must not exceed 100 ppm. The amount of toxics contained in the carrier (water) for inks is not counted in this total.

7 REJECTION FOR NONCOMPLIANCE

Violation of any requirement of this standard shall (at Digital's option) result in the rejection of the product and its return to the supplier at the supplier's expense.

Any person desiring a waiver or exception to one or more of the requirements defined in this standard shall first consult with Industrial Packaging Engineering (IPE) or the designated Customer Service or plant packaging focus.

All waiver requests shall follow the procedure defined in *DEC STD 066-2 Waivers to Digital Design Standards*.

APPENDIX A REFERENCED DOCUMENTS

A.1 EL-Class Digital Documents

EL-Class Number	Document Title
EL-00043-01	*DEC STD 043-1 Packaging Requirements - Sheets, Blanks, or Coils of Steel or Aluminum*
EL-00045-00	*DEC STD 045-0 Packaging Products for International Shipment - Introduction*
EL-00047-01	*DEC STD 047-1 Bar Code: Product and Shipping Carton/Container Labelling*
EL-00066-02	*DEC STD 066-2 Waivers to Digital Design Standards*
EL-00067-00	*DEC STD 067-0 Electrostatic Discharge - Sensitive Devices*
EL-00067-02	*DEC STD 067-2 Packaging of Electrostatic Discharge-Sensitive Devices: Procedures and Protective Packaging Materials*
EL-00102-00	*DEC STD 102-0 Environmental Standard for Computers and Peripherals - General Test Requirements*
EL-00102-01	*DEC STD 102-1 Environmental Standard for Computers and Peripherals - Temperature, Humidity, and Altitude Test Requirements*
EL-00106-00	*DEC STD 106-0 Quality Requirements for Customer Service Parts*
EL-00136-03	*DEC STD 136-3 The Introductory and Review Processes for Digital Chemical Products*
EL-00178-01	*DEC STD 178-1 Digital Marking Requirements for Piece Parts*
EL-00178-04	*DEC STD 178-4 Shipping Container Marking Requirements for Finished Goods*
EL-00178-08	*DEC STD 178-8 General Shipping Documentation and Container Labeling Requirements for Finished Goods Intended to be Shipped to Customers*
EL-CP534-00	*Hazardous Materials/Dangerous Goods Policies and Procedures Manual*
EL-MF425-00	*Procedures for Consolidating Packaged Products for Domestic and/or International Shipment*

Use VTX SMC to order copies of EL-class documents from Standards and Methods Control. Send distribution questions to JOKUR::SMC or call DTN: 234-4423.

A.2 Other Digital Documents

Document Number	Document Title
A-PG-FSGUIDE-GS-DA00	*Customer Service Logistics Packaging and Labeling for Fit-for-Use Classification*
A-PS-1900000-GS-0	*General Specification for Dimensional and Packaging Requirements for Multipackage Dual-in-Line Packages*
A-PS-9900057-GS	*Pallets*
A-PS-9906487-00	*Tape - Polyester*
A-PS-9906837-00	*Tape - Polypropylene*

A.3 Other Documents

Document Number	Document Title
ASTM-D4919-89	*Standard Specifications for Testing HM Packaging*
BS 2629	*Pallets for Materials Handling for Through Transit (Part 1 Dimensions, Construction and Marking*
	Factory Mutual System, Loss Prevention Data Sheet 8.0C, Definition of Class IV Commodity and Classification of Plastics by Trade Name (U.S.)
	Uniform Freight Classification, Rule 41 (U.S.)
	National Safe Transit Association (NSTA), Preshipment Test Procedures

A.4 Ordering Information

Purchase specifications are available from:
Central Specification Control Systems, NRO5/M2
or any Microfilm Reference File, or the SPOC System.

Document BS 2629 may be ordered from:
British Standards Institution
2 Park Street
London W1A2BS

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